Tensile mechanical properties of dry cortical bone extracellular matrix: a comparison among two osteogenesis imperfecta and one healthy control iliac crest biopsies

Supplementary materials:

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Fracture surface type

Scanning electron microscope images of the tensile specimen were collected before and after mechanical testing (see figure 1,2 and 3). Post-testing images were used to classify the fracture surface type (FST). In figure 1, 2, and 3 you will find the defined FST for each micro tensile specimen which green arrow indicating voids (e.g. canaliculi).

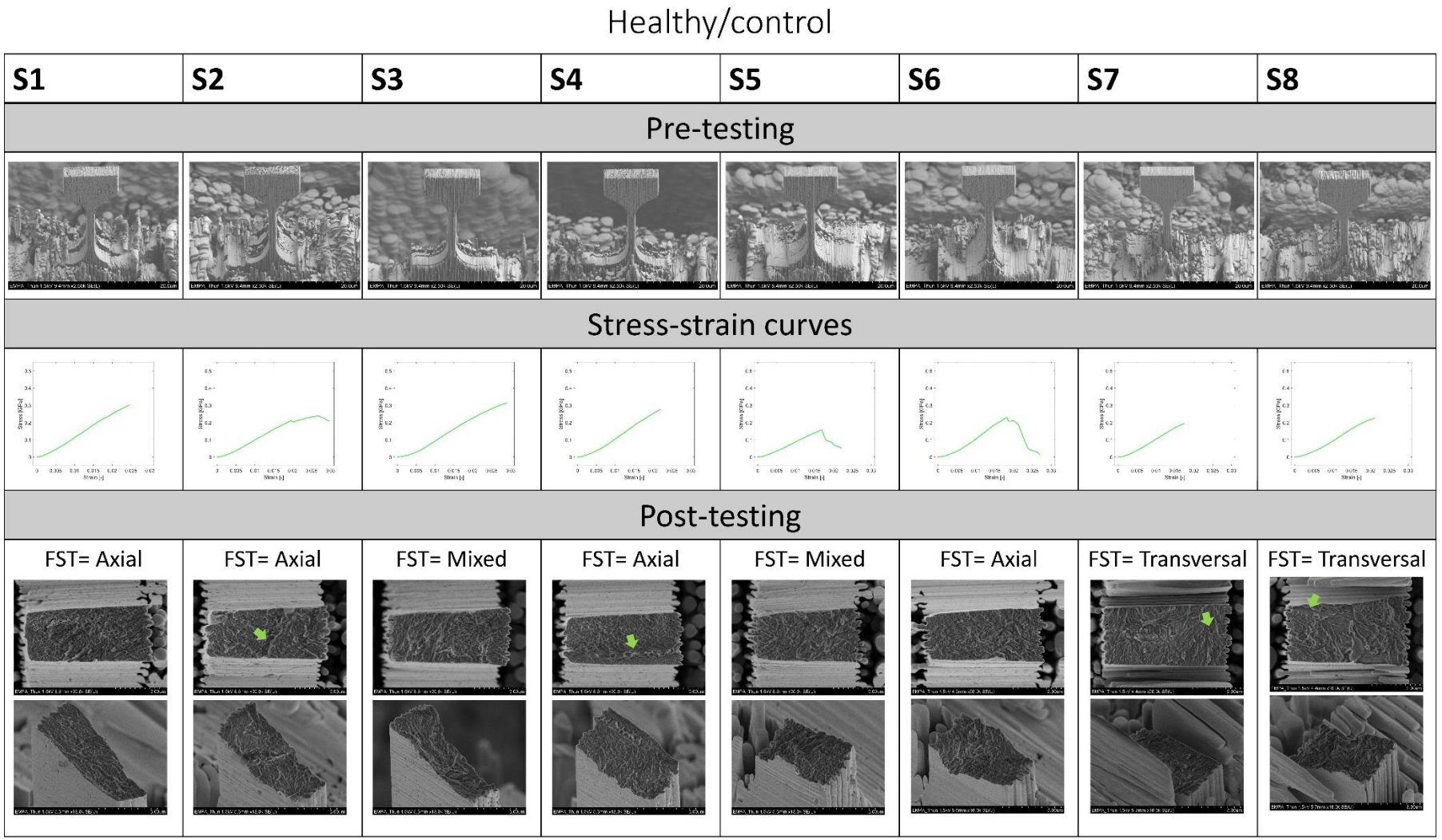

Figure 1: Scanning electron images of the healthy control tensile specimens. Before and after mechanical testing. Post-testing images were used to classify the fracture surface type.

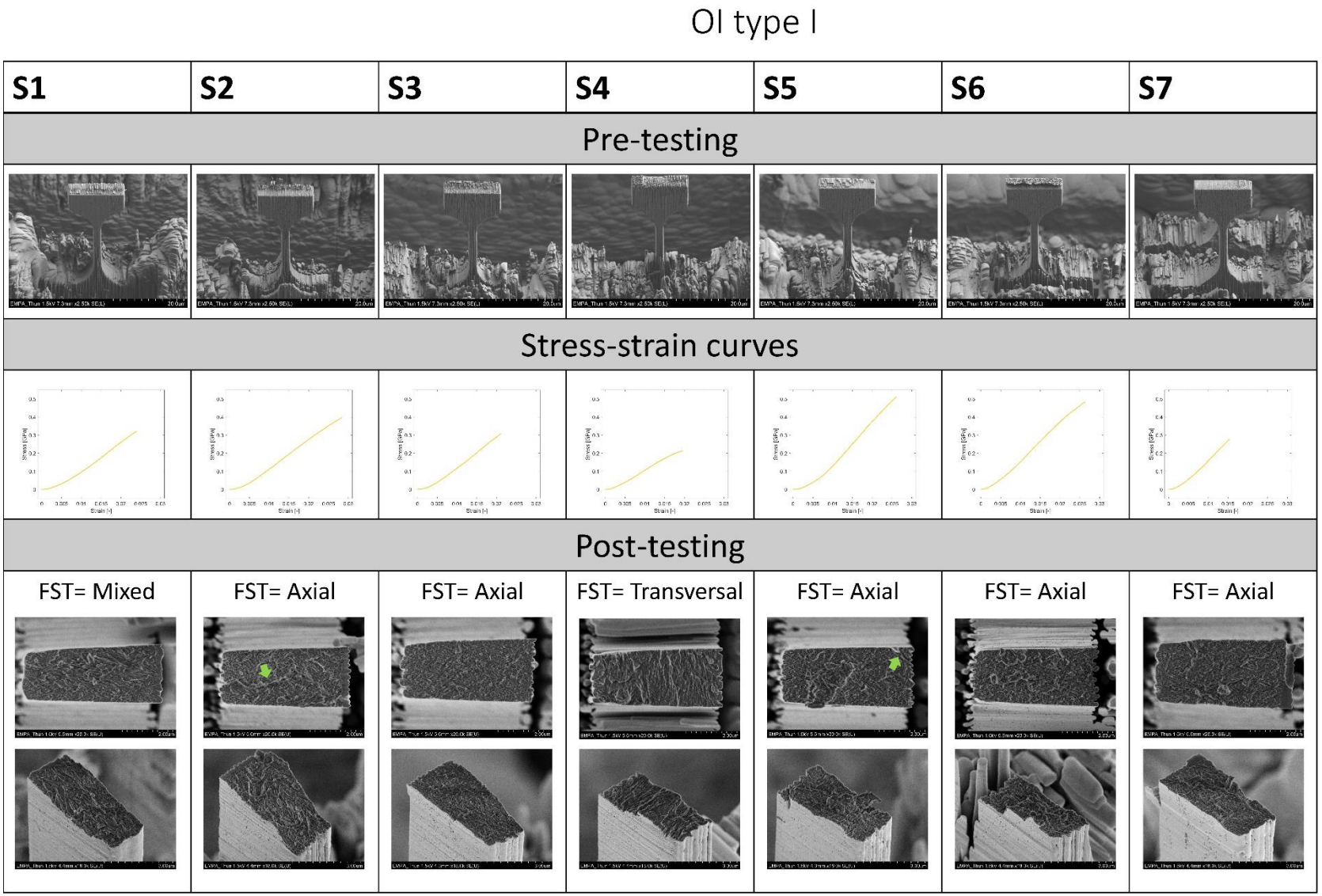

Figure 2: Scanning electron images of the OI type I tensile specimens. Before and after mechanical testing. Post-testing images were used to classify the fracture surface type.

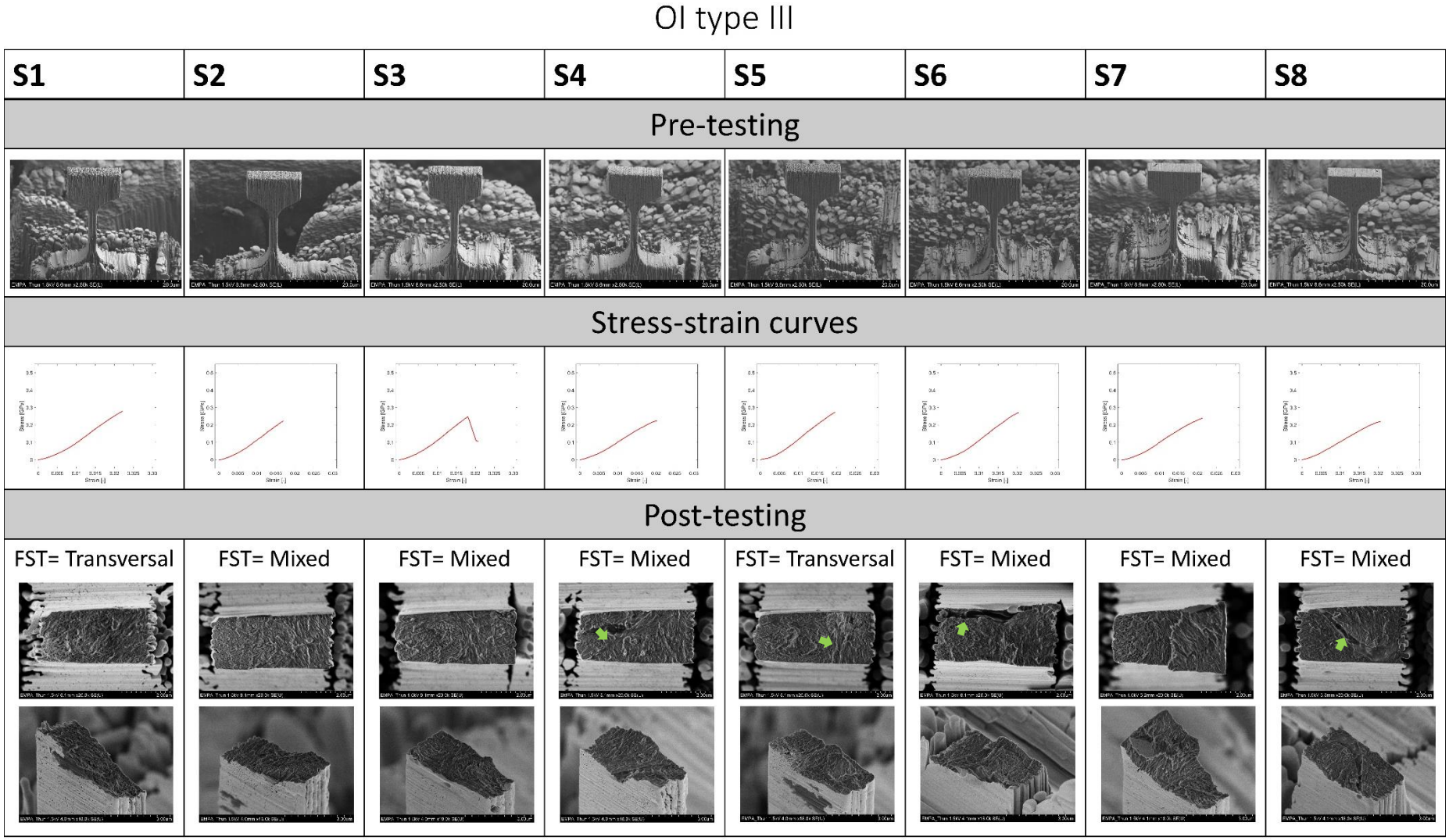

Figure 3: Scanning electron images of the OI type III tensile specimens. Before and after mechanical testing. Post-testing images were used to classify the fracture surface type.

Raman Spectroscopy

Figure 4 shows a representative Raman spectrum for healthy control, OI type I and OI type III specimen. Those spectra were corrected by the background light.

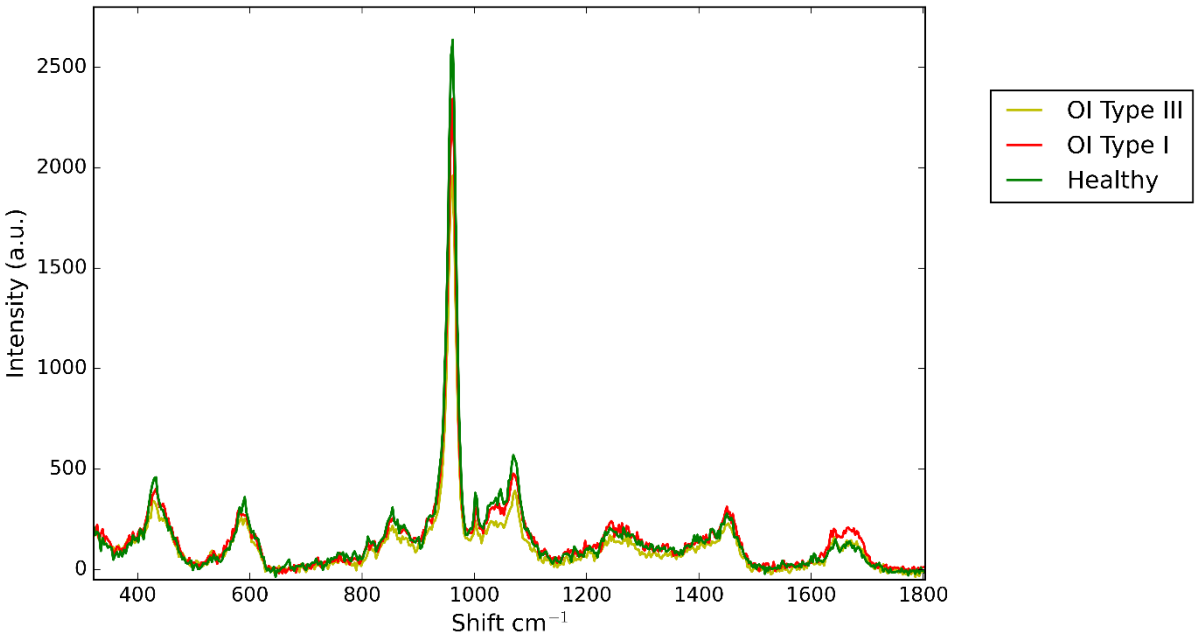

Figure 4:Representative Raman spectrum at polarization angle 0°. Healthy control = green, OI type I in red and OI type III in light green